IN THE CLAIMS:

1-3. (canceled)

4. (new) A tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line and causing agitation in the tank by the discharge of the feedwater in part through a rotating discharge port and in other part through a pulse discharge port, comprising:

a housing having an inlet for connection to the feedwater line,

a turbine mounted in the housing and driven to spin by inflow of the feedwater,

a nozzle operatively connected to the spinning turbine such that the nozzle rotates with respect to a given rotation axis, and, the nozzle defining a rotating discharge port for discharging a stream in various directions, not all of which are continuously coincident with the given rotation axis during a complete rotation of the nozzle,

a pulser arrangement for enhancing the agitation in the tank by means of the discharge of a fractional amount of the feedwater inflow through a pulse-discharge port which is distinct from said rotating discharge port and in which the discharge stream pulses between alternating phases of flow and quiescence, the pulser arrangement comprising:

providing the housing with an pulse-discharge port in the housing to the outside; and,

a blocker door coupled to and driven by the spinning turbine to cycle between blocking the fractional amount of feedwater inflow thereto and unblocking such, such that a discharge stream issues from the pulse-discharge port pulses between alternating phases of flow and quiescence.

5. (new) The tank agitator of claim 4 wherein the turbine comprises a series of angularly spaced radial vanes.

6. (new) The tank agitator of claim 4 further comprising a drive train interconnecting the spinning turbine with the nozzle.

7. (new) The tank agitator of claim 4 further comprising a drive train interconnecting the spinning turbine with the blocker door.

8. (new) The tank agitator of claim 7 further comprising a drive train interconnecting the spinning turbine with the rotating nozzle.

9. (new) The tank agitator of claim 8 further wherein the drive train is arranged to slow the speed ratio between the relatively more rapid cyclic rate of the spinning turbine and the, in consequence, relatively slower cyclic rates of the blocker door as well as the rotating nozzle.

10. (new) A method of agitating a tank by a tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line -- and which tank agitator generally causes agitation in the tank by the discharge of the feedwater in part through a rotating discharge port and in other part through a pulse discharge port -- by more particularly locating the tank agitator within a given proximity of a sidewall or corner of the tank for achieving a given effect, comprising the steps of:

providing the tank agitator with a housing having an inlet for connection to the feedwater line, a turbine mounted in the housing and driven to spin by inflow of the feedwater, a nozzle operatively connected to the spinning turbine such that the nozzle rotates with respect to a given rotation axis such that the nozzle defines a rotating discharge port for discharging a stream in various directions, not all of which are continuously coincident with the given rotation axis during a complete rotation of the nozzle, and, a pulser arrangement for enhancing the agitation in the tank by means of the discharge of a fractional amount of the feedwater inflow through a pulse-discharge port which is distinct from said rotating discharge port and in which the discharge stream pulses between alternating phases of flow and quiescence, the pulser arrangement comprising: providing the housing with an pulse-discharge port in the housing to the outside; and, a blocker door coupled to and driven by the spinning turbine to cycle between blocking the fractional amount of feedwater inflow thereto and unblocking such, such that a discharge stream issues from the pulse-discharge port pulses between alternating phases of flow and quiescence;

providing a drive train to interconnect the spinning turbine with the rotating nozzle in order to slow the speed ratio from the relatively more rapid cyclic rate of the spinning turbine to a given, in consequence, relatively slower cyclic rate of the rotating nozzle; and

locating the tank agitator vertically relative a sidewall or corner of the tank, with the rotating discharge port near the surface interface and the pulse-discharge port more deeply submerged, such that the combination of the chosen proximity of the rotating discharge port to the sidewall or corner with the given cyclic rate of the rotating discharge port causes about a half cycle of loading against the sidewall or corner and another about half cycle of discharging in coordination with the unloading of the load against the sidewall or corner, whereby the given effect comprises enhanced surface wave agitation.

11. (new) The method of claim 10 further including providing another drive train to interconnect the spinning turbine with the blocker door in order to slow the speed ratio from the relatively more rapid cyclic rate of the spinning turbine to a different, in consequence, relatively slower cyclic rate of the pulse-discharge port.

12. (new) A method of agitating a tank by a tank agitator for connecting onto the terminus of a generally steady flow, low head feedwater line -- and which tank agitator generally causes agitation in the tank by the discharge of the feedwater through a rotating discharge port -- by more particularly locating the tank agitator within a given proximity of a sidewall or corner of the tank for achieving a given effect, comprising the steps of:

providing the tank agitator with a housing having an inlet for connection to the feedwater line, a turbine mounted in the housing and driven to spin by inflow of the feedwater, and, a nozzle operatively connected to the spinning turbine such that the nozzle rotates with respect to a given rotation axis such that the nozzle defines a rotating discharge port for discharging a stream in various directions, not all of which are continuously coincident with the given rotation axis during a complete rotation of the nozzle;

providing a drive train to interconnect the spinning turbine with the rotating nozzle in order to slow the speed ratio from the relatively more rapid cyclic rate of the spinning turbine to a given, in consequence, relatively slower cyclic rate of the rotating nozzle; and

with the spin axis of the rotating axis relatively vertical, locating the tank agitator relatively near a sidewall or corner of the tank such that the combination of the chosen proximity of the rotating discharge port to the sidewall or corner with the given cyclic rate of the rotating discharge port causes about a half cycle of loading against the sidewall or corner and another about half cycle of discharging in coordination with the unloading of the load against the sidewall or corner, whereby the given effect comprises enhanced surface wave agitation.